

ABSTRACT

READ/WRITE CIRCUIT FOR ACCESSING CHALCOGENIDE NON-VOLATILE MEMORY CELLS

A read/write circuit for accessing chalcogenide non-volatile memory cells is disclosed. The read/write circuit includes a chalcogenide storage element, a voltage limiting circuit, a current-to-voltage converter, and a buffer circuit. The voltage limiting circuit, which is coupled to the chalcogenide storage element, ensures that voltages across the chalcogenide storage element will not exceed a predetermined value during a read operation. During a read operation, the current-to-voltage converter, which is coupled to the voltage limiting circuit, converts a current pulse read from the chalcogenide storage element to a voltage pulse. By sensing the voltage pulse from the current-to-voltage converter, the buffer circuit can determine a storage state of the chalcogenide storage element.